Remarks

In response to the arguments presented in the submission after final dated October 27, 2008, the Examiner issued an Advisory Action in which he stated that the cyclic alternate operation of the first and second antenna systems was met by the Gutleber reference and cited column 2 lines 30 through 40 of Gutleber. The Applicant respectfully disagrees. In particular, the subject portion of the Gutleber reference refers to the fact that the signals emanating from the two antenna systems are multiplexed. The fact that the signals are multiplexed in and of itself necessitates that both antenna systems are simultaneously operated. If the antenna systems were operated cyclically alternating in time, then their output signals would not be present at the same time and their would be no need to multiplex them. Therefore, the fact that Gutleber multiplexes signals is conclusive proof that the signals are present simultaneously and that the respective antenna systems are not operated cyclically alternating in accordance with the claim language, rather simultaneously. The Applicant therefore submits that the US PTO has improperly interpreted the claim language of the independent claims and/or has interpreted the Gutleber reference in a manner which is not consistent with the technical definition of the term "multiplex".

Nevertheless, in order to proceed with compact prosecution of this case, the Applicant has chosen to amend independent claims 24 and 25 to include the limitations of former claim 12. In particular, the second partial antenna is generated from the first partial antenna by connecting at least one additional antenna element to the first partial antenna. The Applicant submits that this limitation clearly distinguishes the claimed invention from the prior art of record for the following reasons.

The adding of an additional antenna element to the first antenna system to create the second antenna system automatically dictates that the two partial antennas cannot be operated simultaneously. In the event that an additional antenna element is not switched in it is clearly impossible for the second antenna system to be active, since that second antenna system requires switching in of the additional antenna element. The claim language therefore clearly dictates that, in the event that the additional antenna element is not switched in, only the first partial antenna can be active (the antenna system with the wide angular dependence, i.e. without the notch). When the additional antenna element is switched in then it is only possible for the second partial antenna to be active, since the first partial antenna is then functioning together with the additional antenna to constitute the second partial antenna (having the second directional dependence with notch).

In the embodiment of figure 1, the first partial antenna system is defined by the array R1 of the antenna elements 110-1 to 110-6. That embodiment of figure 1 realizes the second antenna system through the additional switching in of antenna elements 110-7 to 110-12 in an array designated with R2. Since the first antenna system is realized by the array R1, the second antenna system is defined through the sum of both arrays R1 + R2. A control device switches a voltage source 130a using a suitable switching device 130b to switch between the first partial antenna R1 and the second partial antenna R1 + R2.

In contrast thereto, US '999 (Gutleber) proposes two separate spatially separated and simultaneously operated antenna structures. Referring to figure 1 of US '999 these two arrays systems are the notch antenna 10 and the omni-directional antenna 12. In figure 5, these are the antenna elements 100-200-..., N in combination with amplitude and phase control elements K1 to KN and the adder 50 which produce the notch antenna pattern. The antenna elements 100, 200, ... N in combination with the

amplitude and phase control elements K1 to KN and additional phase shifters Φ, Φ Φ, ... nΦ produce a scanned notch antenna pattern. In both cases, i.e. in the event of the embodiment according to figure 1 as well as according to figure 5 in US '999, coherent signals in both antenna structures are correlated in phase and amplitude in order to facilitate subsequent subtraction from each other. Since it is only possible for signals to be coherent in the event that they are radiated simultaneously and since the phase correction only makes sense in the event that the signals are present simultaneously, both these formulations of US '999 clearly necessitate the fact that antenna structures US '999 are always simultaneously active. Furthermore, there is no device depicted in the embodiments of US '999 which is capable of switching operation of one antenna or the other antenna in an alternative sense. Due to the multiplexed and phase aligned structures of the antenna systems, such a switching mechanism would make no sense.

In accordance with the invention, it is precisely the subsequent alternating addition of an additional antenna array to the first antenna system which results in transformation of that first antenna system into the second antenna system. This recitations of the independent claims as amended clearly prohibits simultaneous operation of the first partial antenna R1 together with the second partial antenna R1 + R2. In contrast to two completely separated antenna structures, the double utilization of the first antenna array R1 in accordance with the invention leads to a more compact antenna device. A similar effect is therefore achieved as is in US '999 but using structures and devices which are substantially more simplified. In particular, it is not necessary to adjust the phases of the signals being subtracted in such a fashion that they can be subtracted in phase aligned fashion. In accordance with the invention, a narrow detection region is achieved with the subtraction of signals obtained during different time intervals with antenna systems which are sequentially or cyclically operated thereby obviating the need for a

difficult phase correction in order to maintain coherence. US '999 provides no suggestion to one of average skill in the art that antenna systems can be operated in a cyclically alternated fashion thereby avoiding the need for phase aligned coherence signal operation.

The invention recites advantageous features not suggested by prior art and is therefore sufficiently distinguished from that prior art to warrant patenting in the United States. The dependent claims of record inherit the limitations of the base claims and are therefore similarly distinguished from the prior art of record for the reasons given. The Applicant therefore requests reconsideration and passage to issuance.

No new matter has been added in this amendment.

Respectfully submitted,

Paul Vincent

Dr. Paul Vincent

Registration number 37,461

May 13, 2009

Date

Dreiss Patentanwälte
Postfach 10 37 62
D-70032 Stuttgart, Germany
Telephone +49-711-24 89 38-0
Fax +49-711-24 89 38-99